NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LYNDON B. JOHNSON SPACE CENTER

JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION
PURSUANT TO 10 U.S.C. 2304(c)(1) and
FEDERAL ACQUISITION REGULATION (FAR) 6.302-1

1. **This document is a justification for other than full and open competition prepared by the NASA Lyndon B. Johnson Space Center (JSC).**

2. **The nature and/or description of the action being approved:**

This recommendation provides the rationale for contracting with Symmetry Resources, Inc, (SRI) in Arab, AL, for extended calendar life testing of Li-ion cells for the Long Life Battery for the spacesuit.

3. **Description of the supplies or services required, include an estimated value:**

The base for the test services requested will cost $23,552.00, and will include 5 options (Option 1-$53,583, Option 2-$51,423, Option 3-$53,041, Option 4, $53,278, and Option 5-$26,026), which is a total $260,903 over 5 years. It will involve performing periodic capacity cycling after periods of temperature controlled storage to determine their calendar life performance. This effort will require using test set-up hardware and software, fixtures, safe handling methods, and a prototype battery developed by SRI. This effort is limited to a 3 month storage period followed by cell testing interval to assess calendar life degradation and annual prototype battery cycling.

4. **Statutory authority permitting other than full and open competition:**

The statutory authority permitting other than full and open competition for this action is Federal Acquisition Regulation (FAR) 6.302-1(a)(2)(ii)(A), "Only one responsible source and no other supplies or services will satisfy agency requirements.

5. **A demonstration that the proposed contractor's unique qualifications or the nature of the acquisition requires use of the authority cited:**

SRI's hardware and software and safe handling plans are unique to the test equipment and facilities at SRI and therefore are not transferable to other sources without significant modifications and risk. Sourcing this effort to a firm other than SRI would require redeveloping the hardware and software, fixtures, and safe handling methods at an alternate source. While redevelopment of

software, fixtures and handling methods is reasonable, redevelopment of the hardware invalidates the intent of the procurement. The intent of this procurement is to take advantage of the preserved charge state and environment of the initial test subjects as well as the prototype battery assembled in 2006. Awarding to another firm would require transfer of the 108 MoliJ cells, 108 Samsung cells, and a prototype battery valued at more than $12,000 to an alternate source. Li-ion cells require transport in a discharged configuration. These cells, as they currently exist, can serve to provide early wear-out indication of the flight battery if they are not forcibly discharged and transported in an unknown environment. Devising a shipping method which preserves the current environment of each cell providing for safe transit at high state of charge is a potential risk to the cell. Preservation of these assets is important as starting over with a new cell population would require both native (un-processed by other project activities) cells and one calendar year to replace the previous data set. This additional time would mean any ground-tested cells could never catch the on-orbit assets jeopardizing the usefulness of the calendar life testing. These adjustments would cost NASA at least an additional $25,000 and 3 months of time and possibly risk the value of $125,000 worth of testing already performed. Therefore, no other facility can be found that meets all of the requirements previously identified.

6. Description of the efforts made to ensure that offers are solicited from as many potential sources as practicable:

SRI won contract NNJ09HB24P competitively, the requirement for which was to perform Lot Certification Testing of 2 LLB cell lots. The requirements in this document's associated statement of work (SOW) could not have been included in the original competition due to the uncertainty of the necessity of which cell design to keep testing and the uncertainty of the ISS Program cargo up mass capability. NASA logistical ISS resupply capability likely will not be restored within the 5-year certified life of the LLB suggesting the need for long term characterization of on-orbit assets should life extension of on-orbit assets prove possible. After contract award, the LLB project selected the Moli J cell design allowing focused long-term degradation monitoring per contract NNJ10HB97P. Data collected will be used to extend the certified life of the LLB, therefore commonality with the initial certification testing, equipment and processes is required.

This 5-year contract is limited to 1-year phases to coincide with the availability of program funding.

7. Description of the market research conducted, and the results, or a statement of the reasons why market research was not conducted.

A synopsis for this effort was issued on the NASA Acquisition Internet Service on June 07, 2010 to notify industries of this action. The synopsis closed on June 18, and no responses were received.

8. Other facts supporting the use of other than full and open competition:

The cost of the SRI's test services are fair, and reasonable, and in line with previous similar efforts. Since SRI will most efficiently and economically achieve NASA's requirements, it is in the Governments best interest to sole source this effort to SRI.

9. Sources, if any, that expressed an interest in writing the acquisition:

No sources expressed an interest in writing.

10. The actions, if any, the Agency may take to remove or overcome any barriers to competition before any subsequent acquisition for the supplies or services required:

This Agency will continue to remove or overcome any barriers to competition before any subsequent acquisition for these services are required. To do so, the procurement offices will coordinate with the COTR to ensure any needs for publicizing formal RFIs and sources sought synopses are met. These postings will enable the COTR and technical community to gather crucial information regarding the options and available sources for the future testing needs of the Agency. The technical offices and COTR will continue to monitor industry capabilities by attending related seminars and industry forums. The COTR will also continue to review relevant technical journals, Government and commercial databases, and Internet resources for relevant information.